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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,631	01/06/2004	Kazushige Takechi	Q79065	3211

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EXAMINER

NGUYEN, JOSEPH H

ART UNIT PAPER NUMBER

2815

DATE MAILED: 08/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/751,631

Applicant(s)

TAKECHI, KAZUSHIGE

Examiner

Joseph Nguyen

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 and 23-30 is/are pending in the application.
- 4a) Of the above claim(s) 2,8,23-26 and 29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,27,28 and 30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 3, it is not understood how a thin film layer can comprise a thin film transistor since a transistor is well known in the art as a device formed of multiple layers. As such, it should be the other way around wherein the transistor comprises a thin film layer.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 4-6, as best understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Burroughes et al. (US 6,592,969).

Regarding claim 1, Burroughes et al. discloses in figure 1 a flexible electronic device comprising a flexible film 2 (col. 6, line 11 and col. 4, lines 28-30); a substrate 4 (col. 6, line 11) disposed on the flexible film, the substrate being different from the material of said flexible film (col. 6, lines 10-11) and thickness of the substrate is larger than 0  $\mu\text{m}$  and not larger than 200  $\mu\text{m}$  (col. 3, lines 35-36); and an electrically active thin film layer OLED (as a whole) disposed directly on the substrate 4.

It is noted that the claimed active thin film layer is a device since applicant defines this active thin film layer as comprising a thin film transistor, which is a device (see claim 3). As such, the "active thin film layer" can be broadly interpreted as an active thin film device. Therefore, OLED as shown in figure 1 of Burroughes et al. is an organic light emitting diode, which is directly disposed on the substrate and can be construed as "active thin film layer".

Regarding claims 4-5, substrate 4 as shown in figure 1 of Burroughes et al. is formed of glass (col. 6, line 12), which is an insulating material.

Regarding claim 6, layer 2 as shown in figure 1 of Burroughes et al. is plastic, which is flexible (col. 4, lines 30-31).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burroughes et al. in view of Weaver et al. (US 2004/0079945).

Regarding claims 3 and 27, Burroughes et al. discloses in figure 1 substantially all the structure set forth in the claimed invention except the thin film device being a silicon thin film transistor. Note that Burroughes et al. teaches the structure in figure 1 can be formed with organic thin film transistor (col. 4, lines 40-45). However, Weaver et al. discloses a silicon thin film transistor or organic thin film transistor can be alternatively used. In view of such teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Burroughes et al. by employing a silicon thin film transistor in the structure as shown in figure 1 of Burroughes et al. because organic thin film transistor and silicon thin film transistor were art equivalents recognized.

Claims 7, 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burroughes et al. in view of Ishida (US 4,661,428).

Regarding claims 7, 28 and 30, Burroughes et al. discloses in figure 1 substantially all the structure set forth in the claimed invention except the flexible film having a thermal conductivity higher than 0.01 W/cm deg. Note that Burroughes et al. discloses the flexible film is formed of plastic (col. 6, line 11) and applicant discloses a copper film has a thermal conductivity of 4.0 W/cm deg, which is higher than 0.01 W/cm deg (col. 11, lines 19-20). However, Ishida discloses the flexible film can be formed of plastic or copper (col. 4, lines 51-56). In view of such teaching, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify Burroughes et al. by having the flexible film formed of copper, which has a thermal conductivity higher than 0.01 W/cm deg because copper and plastic were art equivalents recognized.

### ***Response to Arguments***

Applicant's arguments filed 06/09/2006 have been fully considered but they are not persuasive.

With respect to claim 1, applicant argues Burroughes et al. does not disclose an electrically active thin film layer disposed directly on the substrate as recited in now amended claim 1. However, as explained in rejection of claim 1 above, the claimed active thin film layer is a device since applicant defines this active thin film layer as comprising a thin film transistor, which is a device (see claim 3). As such, the "active thin film layer" can be broadly interpreted as an active thin film device. Therefore, OLED as shown in figure 1 of Burroughes et al. is an organic light emitting diode, which is directly disposed on the substrate and can be construed as "active thin film layer". It is further noted that the structure of OLED (thin film device) is directly formed on the glass substrate 4 as shown in figure 1 of Burroughes et al. is similar to the thin film device 1 is directly formed on the glass substrate 2 as shown in figure 2A of the instant application.

With respect to claims 7 and 28, applicant argues Burroughes teaches away from using copper to form the flexible film. However, nowhere does Burroughes teach against using copper to form the flexible film. It is well known that every material

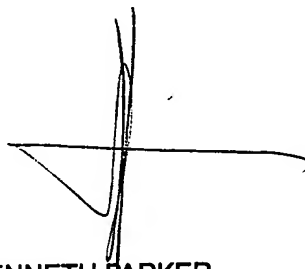
including copper and plastic inherently constitutes a thermal conductivity property. Further, Ishida teaches in column 4, lines 51-56 plastic and copper can be alternatively used to form a film layer. Therefore, it would have been obvious at the time of the present invention to modify Burroughes et al. by substituting plastic for copper to form a flexible film since the Examiner takes Office Notice of the equivalence of plastic and copper for their use in the film layer and selection of any of these known equivalents would be within the level of ordinary skill in the art.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Nguyen whose telephone number is (571) 272-1734. The examiner can normally be reached on Monday-Friday, 7:30 am- 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JN  
July 20, 2006.

A handwritten signature in black ink, appearing to read 'KENNETH PARKER', written over a horizontal line.

**KENNETH PARKER**  
**SUPERVISORY PATENT EXAMINER**